(FPC) or the like having flexibility; and a (rigid) circuit part **32** being disposed on the circuit board **30** and having rigidity. Furthermore, the display device **101** includes a battery **45** for supplying power to the circuit part **32** the battery **45** being disposed above the circuit board **30**.

[0088] The battery **45** is a laminated battery, a paper battery of e.g. lithium ion polymer, or the like, which has flexibility. The battery **45** is disposed between the bottom face **20***b* of the housing **20** and the circuit board **30**.

[0089] The display panel **10**, the housing **20**, and the circuit board **30** have flexibility at least along the Z direction. The housing **20** internally has an upper face **20***a* and a bottom face **20***b*, the circuit board **30** being disposed on an upper face **45***a* of the battery **45**. The display panel **10** is disposed so that the upper face **10***a* thereof is in contact with the upper face **20***a* of the housing **20**.

[0090] Assuming a length **2***a* of the circuit part **32** along the X direction, a thickness b (length along the Z direction) of the circuit part **32**, a distance d between the bottom face **20***b* of the housing **20** (or the lower face of the battery **45**) and the lower face **10***b* of the display panel **10** along the Z direction, and a radius of curvature r of the bottom face **20***b* of the housing **20** when the housing **20** is curved to a maximum extent along the Z direction, these values satisfy the following relationship, similarly to Embodiment 1.

$$a \leqq [d^2 - b^2 + 2 \cdot r \cdot (d - b)]^{(1/2)} \quad (1)$$

[0091] Note that, in any portion of the display device **110** where the display panel **10** is not disposed, the upper part of the housing **20** is located at where the display panel **10** would be; therefore, in such portions, d represents the distance between the bottom face **20***b* of the housing **20** and the upper face **20***a* of the housing **20**. The radius of curvature r is a radius of curvature of the bottom face **20***b* of the housing **20** when the housing **20** is curved so that the upper face **20***a* of the housing **20** or the lower face **10***b* of the display panel **10** abuts with the circuit part **32**.

[0092] In the display device **101**, too, effects similar to those of the display device **100** of Embodiment 1 are obtained because the relationship of the aforementioned inequality (1) is satisfied by the length **2***a* of the circuit part **32**, the thickness b of the circuit part **32**, the thickness d of the internal gap of the housing **20**, and the radius of curvature r of the bottom face **20***b* of the housing **20** when the housing **20** is curved to a maximum extent. Although the battery **45** of the display device **101** spreads within the interior of the housing **20**, the flexibility of the display device **101** can be sufficiently enhanced because the battery **45** has flexibility.

INDUSTRIAL APPLICABILITY

[0093] The present invention is suitably used for display devices such as liquid crystal display devices having an active matrix substrate with thin film transistors, organic electroluminescence (EL) display devices, and inorganic electroluminescence display devices.

REFERENCE SIGNS LIST

[0094] **10** display panel
[0095] **20** housing
[0096] **30** circuit board
[0097] **32** circuit part
[0098] **35**, **45** battery
[0099] **100**, **101** display device
[0100] **200** flexible electronic device
[0101] **211** flexible driver IC for driving
[0102] **212** flexible display panel
[0103] **213** flexible printed circuit
[0104] **214** flexible driving circuit board
[0105] **216** flexible case
[0106] **217** flexible battery

1. A flexible display device, comprising:
a display panel having flexibility;
a circuit board having flexibility;
a circuit part disposed on the circuit board, the circuit part having rigidity; and
a housing accommodating the circuit board and supporting the display panel above the circuit board, the housing having flexibility, wherein,
the display panel, the circuit board, and the housing have flexibility at least along a first direction which is perpendicular to the plane of the display panel;
the housing internally has an upper face and a bottom face, the circuit board being disposed on the bottom face of the housing; and
a length **2***a* of the circuit part along a second direction which is parallel to the plane of the display panel, a thickness b of the circuit part along the first direction, a distance d between the bottom face and the upper face of the housing or between the bottom face and a lower face of the display panel, and a radius of curvature r of the bottom face of the housing when the housing is curved to a maximum extent along the first direction satisfy the relationship:

$$a \leqq [d^2 - b^2 + 2 \cdot r \cdot (d - b)]^{(1/2)}.$$

2. The flexible display device of claim **1**, wherein the radius of curvature r is a radius of curvature of the bottom face of the housing when the housing is curved so that the upper face of the housing or the lower face of the display panel abuts with the circuit part.

3. The flexible display device of claim **1**, wherein the distance d is in a range greater than 0.5 mm but smaller than 10 mm, and the radius of curvature r is in a range greater than 1 mm but smaller than 200 mm.

4. The flexible display device of claim **3**, wherein the distance d is in a range greater than 1 mm but smaller than 3 mm, and the radius of curvature r is in a range greater than 5 mm but smaller than 60 mm.

5. The flexible display device of claim **1**, wherein the radius of curvature r is a radius of curvature of the bottom face at the position of the circuit part when the housing at the circuit part of the position is curved to a maximum extent along the first direction.

6. The flexible display device of claim **5**, wherein the distance d is in a range greater than 0.5 mm but smaller than 3 mm, and the radius of curvature r is in a range greater than 1 mm but smaller than 30 mm.

7. The flexible display device of claim **1**, wherein the circuit part is a semiconductor chip, a semiconductor circuit board, a resistor, or a capacitor.

8. The flexible display device of any of claim **1**, wherein the circuit board is a flexible printed board whose main component is polyimide.

9. The flexible display device of claim **1**, wherein the display panel includes a pair of flexible substrates at least one of which is transparent, and liquid crystal sealed between the pair of flexible substrates, and performs displaying by alter-